
Sarcolaena isaloensis, a New Species of Sarcolaenaceae from Isalo, South-central Madagascar

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ABSTRACT. *Sarcolaena isaloensis*, from the Isalo region of Madagascar, is described as a new species in the endemic family Sarcolaenaceae. It is unique in the genus by virtue of its very narrow leaves that lack induplicate pefoliation traces, and the long pubescence of its involucre.

The family Sarcolaenaceae, with 10 genera and ca. 33 species, is the largest of the 8 families of flowering plants endemic to Madagascar (Capuron, 1970; Cavaco, 1952; Takhtajan, 1986). Recent studies of *Sarcolaena* (Randrianasolo & Miller, in prep.) have shown that four collections from the Isalo region, on the southwest portion of the central plateau, represent a previously undescribed species. Isalo has been recognized as a center of endemism due to its unique sandstone, which is dissected by numerous valleys that are more humid than the surrounding area, essentially creating climatic islands (Humbert, 1927; Dorr et al., 1989). The Conspectus of the Vascular Plants of Madagascar Database lists 30 species with the specific epithet "isaloensis" or similar orthography (Schatz, pers. comm.).

Sarcolaena isaloensis A. Randrianasolo & J. S. Mill., sp. nov. TYPE: Madagascar. Fianarantsoa: plateau and valleys of Isalo, W of Ranohira, 800–1,250 m, 29 Jan.–2 Feb. and 8–10 Apr. 1955 (young buds), *Humbert 28695* (holotype, P; isotypes, MO, P[2]). Figure 1.

Arbor 6–10 m alta. Folium lamina anguste elliptica vel anguste ovata, 3–5.3 cm longa, 0.5–1.1 cm lata, apice acuto, mucronato, base obtusa, vernatione induplicata carente. Inflorescentia terminalis ex 1–2 floribus constans; involucre sicut pedunculo castaneo-sericeo. Fructus capsularis, 6–7 mm longus, 6–8 mm latus, in involucre omnino inclusus.

Trees 6–10 m tall; young twigs sericeous, later glabrate. Leaves alternate, simple, entire, coriaceous; leaf blade narrowly ovate to narrowly elliptic, 3–5.3 cm long, 0.5–1.1 cm wide, the apex acute, mucronate, the base obtuse, the adaxial surface glabrous, the abaxial sparsely brown sericeous, indu-

plicate pefoliation traces absent; petiole 4–8 mm long, canaliculate, brown sericeous on the abaxial surface. Inflorescence terminal, the flowers solitary or paired. Young involucres surrounded by a brown sericeous caducous spathe, the exterior surface with stiff, spreading hairs, 2.5–3.5 mm long. Mature involucres very broadly obovate to widely depressed obovate, 9–11 mm long, 9–12 mm wide, the peduncle brown sericeous, 2–6 mm long. Mature flowers unknown. Fruits capsular, pericarp fragile, completely enclosed in the involucre, 6–7 mm long, 6–8 mm broad; seeds (1–)2(–6).

Distribution. This species is known only from Isalo, west of Ranohira, at the southern limit of the central domain of Madagascar's Eastern Region (Humbert, 1927) from 800 to 1,300 m.

Sarcolaena isaloensis has long (2.5–3.5 mm), stiff, spreading hairs that are evenly distributed on the involucre, a character state that it shares only with *S. eriophora* Thouars and *S. humbertiana* Cavaco, hypothesized to be its two closest relatives (Randrianasolo & Miller, in prep.). However, the leaves of *S. isaloensis* are highly distinct from those of the two species just mentioned; in *S. eriophora* they reach 8 cm in length, and in *S. humbertiana* up to 9 cm, whereas in the new species, leaves are only at a maximum 5.3 cm long.

The species of *Sarcolaena* are primarily distributed in eastern Madagascar. They occur mostly in the wet and moist forests of the east coast, the eastern part of the plateau and escarpment, and the Sambirano Domain (Cavaco, 1952). However, the range of *S. oblongifolia* F. Gérard extends into the dry, southern portions of the central plateau, which are still considered part of the eastern region (Humbert, 1927; Koechlin et al., 1974). Isalo is the driest region from which *Sarcolaena* is known, and both *S. isaloensis* and *S. oblongifolia* exhibit morphological characteristics that reflect this, including small leaves and short petioles, as well as a very reduced inflorescence. However, a number of features separate these two species. *Sarcolaena oblongifolia* has considerably longer and wider leaves than *S.*

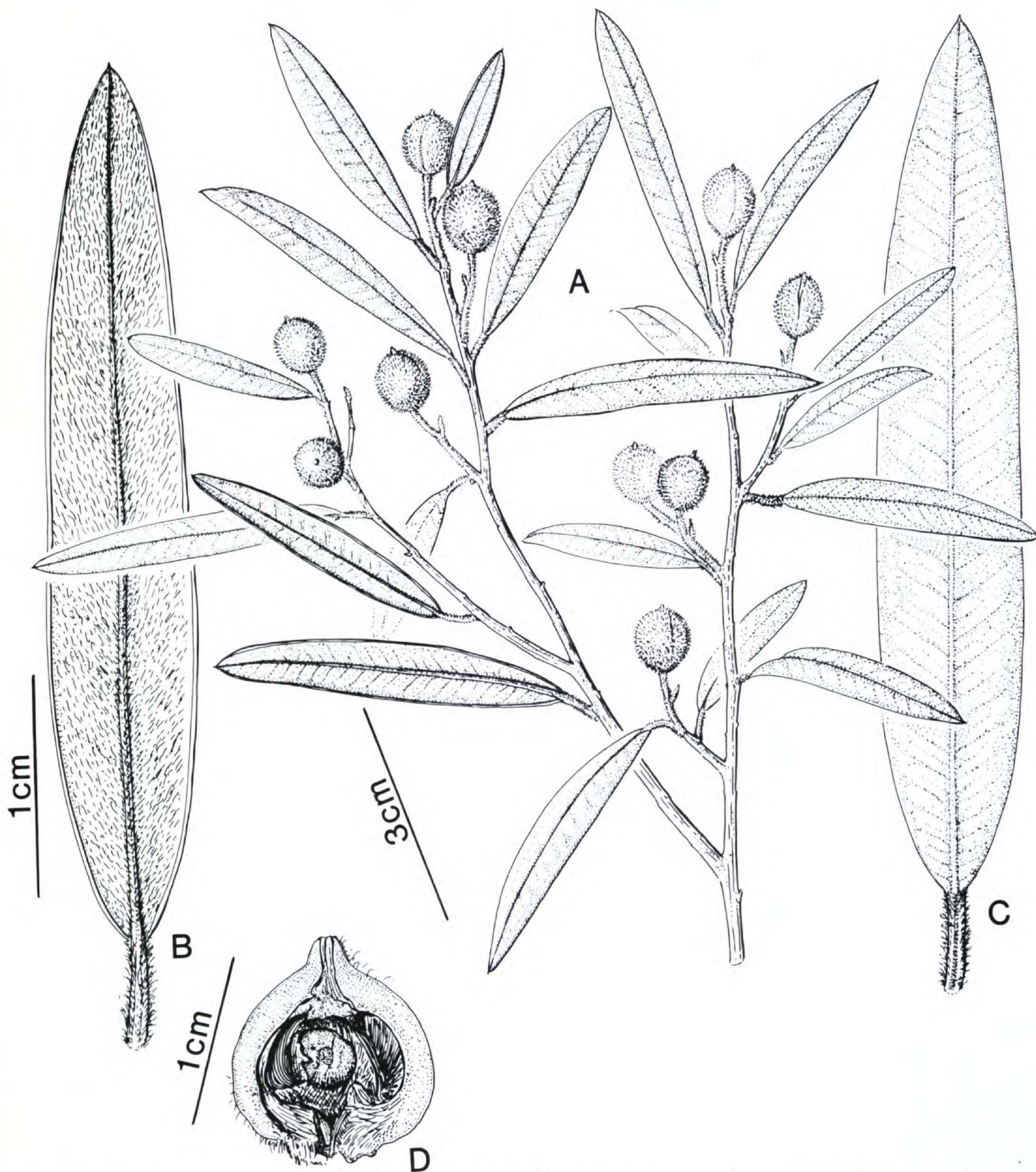


Figure 1. *Sarcolaena isaloensis* A. Randrianasolo & J. S. Mill. — A. Vegetative branch with unopened flower buds. — B. Upper leaf surface. — C. Lower leaf surface. (A–C from *Humbert 28695*, holotype, P.) — D. Longitudinal section of mature involucre (from *Leandri 3951*, P).

isaloensis: 3.2–9.2 by (1.1–)2–2.5(–3.4) cm versus 2.5–5.3 by 0.5–1.1 cm. Similarly, involucre size is markedly greater in *S. oblongifolia* than in the new species: 13–15 mm long, 13.5–14 mm in diameter versus 9–11 mm long and 9–12 mm in diameter. In addition to these quantitative differences in leaf and involucre features, *Sarcolaena isaloensis* lacks induplicate prefoliation traces on the leaf surface, a character present in all other members of the genus *Sarcolaena*.

Paratypes. MADAGASCAR. **Fianarantsoa:** Isalo massif, Betanimanga, 1,000–1,300 m, 18–20 Nov. 1960 (mature fruits), *Leandri 3951* (P); Isalo, Tapia woodland, 900 m, 24 Nov. 1932 (young buds), *Perrier de la Bâthie 16688* (P); Isalo massif near the sign of Isalo Sud, W of Ranohira, *SF 11675* (P).

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